BY ORDER OF THE COMMANDER,
51ST FIGHTER WING

51 FW INSTRUCTION 48-108

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Aerospace Medicine

ERGONOMICS PROGRAM

COMPLIANCE WITH THIS PUBLICATION IS MANDATORY

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This instruction implement AFPD 48-1, *Aerospace Medical Program.* This instruction applies to all military and DoD civilian personnel exposed to ergonomic stressors at Osan Air Base and its Collocated Operating Bases, Ranges and units.

SUMMARY OF REVISIONS

Added "and lifting heavy loads" after vibrating tools and equipment in paragraph **1.1.** and change the word "list" to "discuss" in paragraph **12.** A bar (|) indicates revision from the previous edition.

1. General:

1.1. Exposure to ergonomic risk factors can lead to debilitating work-related musculoskeletal disorders (WMSD), including peripheral neurological disorders. Common ergonomic risk factors include repetitive motion; fixed or awkward postures; forceful hand exertions; lifting and prolonged contact with vibrating tools and equipment, and lifting heavy loads. The primary goal of this program is to minimize the negative impact of WMSD on the AF mission.

1.2. This instruction describes how the medical and safety community supports the 51 FW Commander's efforts to reduce WMSD at Osan AB. Workers and management involvement is critical to the success of this program. Should health and safety professionals push for solutions that workers and management do not accept the changes will have little effect.

2. Responsibilities:

2.1. 51 FW Installation Commander, director, and functional managers will:

2.1.1. Ensure workplaces and processes do not expose employees to known WMSD risk.

2.1.2. Ensure workstations, devices, tools and equipment are properly designed and do not contribute to work-related musculoskeletal disorders.

2.1.3. Provide adequate resources to meet the responsibilities of this instruction.

2.2. 51st Medical Treatment Facility Commander will:

2.2.1. Ensure health care providers properly identify, document, and report WMSD.

2.2.2. Ensure that health care providers report cases they suspect to be WMSD to PHF using a SF 513, Medical Record-Consultation-Sheet or electronic equivalent.

3. 51st Aerospace Medicine, Chief, Flight Medicine will:

3.1. Assist commanders in determining whether to establish an Ergonomics Working Group (EWG) or depend on the Occupational Health Working Group (OHWG) for installation guidance.

3.2. Develop or adapt critical pathways or practice parameters for evaluation, medical management, and follow-up of WMSD treated on the installation.

3.3. Prescribe medically appropriate restrictions from normal to mitigate the effects of ergonomic stressors.

3.4. Brief health care providers on the clinical management and reporting of WMSD and suspected WMSD.

4. 51st Aerospace Medicine, Bioenvironmental Flight (BEF), Chief, BEF will:

4.1. Assist commanders in determining whether to establish an EWG or depend on the OHWG for installation guidance.

4.2. Document work analyses in the industrial case file or facility case file.

4.3. Prioritize and perform work analyses. Work analysis targets the risk factors associated with employee discomfort and recommends controls to minimize or eliminate the exposure.

4.4. Assist supervisors in selecting the appropriate control measures to eliminate or minimize risk factors.

4.5. Evaluate the effectiveness of the implemented controls in eliminating or minimizing risk factors.

4.6. Investigate reported or suspected WMSD.

4.7. Review plans for new or modified operations to ensure design principles have been considered.

4.8. At the request of health care provider, assist the supervisor in modifying the workplace to accommodate the medical restrictions for an existing WMSD.

4.9. Assist the ground safety manager with investigating incidents when routine risk factors may have contributed to the injury.

5. 51st Ground Safety Manager will:

5.1. Participate in OHWG, or EWG if one has been established.

5.2. Maintain and analyze basic information about injuries and trends and coordinate with PHF.

5.3. Compile basic information about the musculoskeletal injuries, such as type of work being performed, when and where the incident occurred, the body parts involved, and the classification of the injury.

5.4. Assist BEF in work analyses, as requested.

5.5. Investigate musculoskeletal injuries associated with single incidents.

6. 51st Aerospace Medicine Squadron, Public Health Flight (PHF) will:

6.1. Participate in the OHWG, or EWG if one has been established.

6.2. Coordinate with installation chief of civilian personnel and the ground safety manager to establish an ongoing installation surveillance process for WMSD.

6.3. Compile injury and illness data to determine WMSD incidence, severity, and restricted workday rates in problem jobs and provide this information to the OHWG or EWG.

6.4. Review the results of reported WMSD and the risk factor data for trends.

6.5. Administer job requirements and physical demands (JR/PD) surveys to employees in potential problem jobs.

6.6. Analyze data for association among ergonomic risk factors, employees discomfort, and reported WMSD (if available) and reports to the OHWG or EWG.

6.7. Provide WMSD awareness education and training to supervisors, workers, health care providers, and other installation personnel.

6.8. Evaluate effectiveness of the controls in reducing employee discomfort and WMSD incidence.

6.9. Document JR/PD results in the appropriate workplace case file.

7. Physical Therapy will:

7.1. Participate in the OHWG or EWG if one is established.

7.2. Provide information on back injuries, restricted duty, work hardening, stretching exercises, and worker rehabilitation as requested by BEF, PHF or Flight Medicine.

7.3. Assist BEF with work analyses, as requested.

7.4. Coach employees to ensure the medical restrictions are incorporated into work practices, as requested.

7.5. Assist PHF with WMSD awareness education and training as requested.

7.6. Provide caseload data to PHF to ensure cases are entered into the illness data collection system.

8. 51 MSS Civilian Personnel Office will: Provide PHF with civilian WMSD data including compensation costs, lost workdays, and restricted workdays.

9. 51 FW Supervisors will:

9.1. Establish an environment that encourages prompt and accurate reporting of signs and symptoms of WMSD.

9.2. Ensure all workers are trained on ergonomic hazards specific to their work area upon inprocessing to the unit and at least annually during unit safety training.

9.3. Promptly report any complaints or symptoms reported by workers to PHF for evaluation and determination of ergonomic risk.

9.4. Implement ergonomic controls as recommended by PHF and BEF to eliminate and/or reduce WMSD in the workplace.

10. 51 FW Workers will:

10.1. Participate in activities designed to anticipate, recognize, evaluate, and control ergonomic risk.

10.2. Provide suggestions for improving the work environment regarding potential or actual ergonomic risk factors.

10.3. Promptly report to supervisor musculoskeletal complaints or symptoms suspected to be associated with the job.

10.4. Attend WMSD awareness education and specific job training as directed.

10.5. Comply with the required control measurers that reduce ergonomic risk factors.

11. Program Elements. The basic elements of an installation WMSD prevention program shall include:

11.1. Identifying potential problem jobs.

11.2. Validating problem jobs.

11.3. Analyzing problem jobs.

11.4. Implementing control measures to reduce employee risk factors.

11.5. Anticipating ergonomic design needs for new or changed jobs.

11.6. Providing medical management.

11.7. Training and educating employees and supervisors.

11.8. Record keeping.

11.9. Ensuring employee involvement in the job improvement process.

12. Identifying Potential Problem Jobs. The OHWG or EWG discuss jobs with the potential risk for developing WMSD. This step provides an initial screen to narrow the focus of the installation program. It should not be resource or time intensive. The decision is based on collected information (illness trends, professional judgment regarding risk factors, and overall corporate knowledge). The list of potential jobs is refined whenever new information becomes available. Potential problem jobs most commonly involve routine exposure (performed on three or more days a week) to one or more of the following risk factors:

12.1. Repetitive motions for >2 hours at a time or >4 hours/day.

12.2. Fixed or awkward postures for >2 hours/day.

12.3. Forceful hand exertions for >2 hours/day.

12.4. Vibration from tools (or equipment) for >2 hours/day.

12.5. Manual material handling >2 hours/day.

12.6. Unassisted lifting of loads >25 lb..

13. Validating Problem Jobs. Potential problem jobs may be validated by the administration of the AF-developed Job requirements and physical demands survey by PHF. Initial emphasis should be placed on jobs reporting WMSD.

14. Analyzing Problem Jobs. BEF conducts a work analysis of the risk factor for each problem job. This analysis may be included as part of the periodic industrial hygiene survey. An analysis for a job that has been shown to cause injury or illness will be done within 60 day of the determination. The work analysis will target the risk factors that are associated with the areas of the body that have been identifies as having discomfort, pain, illness, or injury.

15. Control Measures. Control measures include engineering controls, work practice controls, administrative controls, and personal protective equipment.

15.1. Engineering controls are the preferred and first-line method of control when they are feasible. These measures include manipulating or changing the design of the job, the workstation, the tools, or the equipment used by the worker. If permanent-engineering controls cannot be immediately implemented, temporary measures to modify or minimize the identified risk factors should be employed. Some engineering controls may require approval by the AFMC depot manager who develops the technical orders (TO) that govern work operations.

15.2. Work practice controls generally involve changing or improving procedures routinely followed by the worker. These practices include timely equipment maintenance, routine too-sharpening, appropriate tool section, proper orientation of the work, and arrangement of the working surface. Some changes in work practices may require approval by the AFMC depot manager who develops the TO that govern work operations.

15.3. Administrative controls consist of workplace requirements that reduce the duration, frequency, and forcefulness of ergonomic stressors. Using administrative controls can be a useful and cost-effective adjunct to engineering and work-practice controls. A simple example is when keyboard operators mix up their work by keyboarding, filing, and distributing materials so there are natural breaks in the work.

15.4. Personal protective equipment (PPE) such as gloves or padding can help control risk factors such as cold temperatures, vibration, and contact stress. Gloves and padding must be carefully selected for fit, thickness, and material to be effective. The selection must also account for other hazards in the area such as chemical hazards, moving parts, and run-in points. NOTE: Devices worn on or attached to the wrist, back, or other joints to retard movement or provide support are NOT considered PPE for WMSD hazards. There is no definitive proof these devices can prevent WMSD. (See AFOSH Standard 91-31, Personal Protective Equipment)

16. Effectiveness of Controls. After the recommended controls are in place and used, BE re-surveys the job to determine if the control reduce employee exposure to risk factors without introducing new ones.

17. Anticipation of Design Needs. BEF will review plans and designs to anticipate ergonomic risk factors in new or redesigned jobs, workstations, and tools.

18. Medical Management. Medical management reduces WMSD through early diagnosis and treatment.

19. Training and Record Keeping:

19.1. PHF provides initial and periodic ergonomics awareness training to supervisors and employees in industrial job and administrative jobs where computers are used. WMSD awareness training may take several forms including briefings, newspaper articles, brochures and computer software. The objective of the awareness training is to make all workers aware of the benefits of seeking appropriate medical care before musculoskeletal symptoms progress to chromic disability. PHF documents training on the AF Form 2767, Occupational Health Training and Protective Equipment Fit Testing.

19.2. Once a industrial survey has been performed and specific risk factors identified, the supervisors will conduct initial and annual training (until the risk factor is eliminated) to convey to the workers the BE survey findings and recommendations. Supervisors record training on each employee's AF Form 55, Employee Safety and Health Record or electronic equivalent.

20. Employee Involvement. Employees doing the work are a vital link to effective problem solving. Their input is actively solicited and used as much as possible in selecting control measure to reduce risks because they provide information on what proposals can be used and those that will not work.

21. Installation Working Group. Establishing an EWG under the Integrated Safety Council should only be considered if the nature of the risk of WMSD is determined to be widespread or complex. Otherwise the OHWG can provide the appropriate management.

DAVID E. CLARY, Brigadier General, USAF
Commander